REMARKS

Claims 1 and 37-74 are currently pending in the application. Claim 1 has been amended. No claims have been canceled. New claims 73-74 have been added. Applicant respectfully submits that no new matter has been added. Reconsideration of the application as amended is respectfully requested.

Claims 1 and 37-72 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,481,262 to Urbas et al. ("Urbas") in view of U.S. Patent No. 5,374,930 to Schuermann ("Schuermann"). Independent claim 1 relates to a transceiver. Applicant respectfully submits that the cited references, even in combination, fail to teach or suggest at least one of the distinguishing features of independent claim 1, namely, a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal. In addition, the cited references fail to teach or suggest a modulator disposed between the antenna and a signal processor for providing a fourth signal to the antenna for forming the second signal, the modulator varying an impedance between the antenna and the signal processor for providing the antenna with a dual Q-factor, the Q factor being high for the first signal and low for the second signal.

Urbas discloses a passive transponder that includes a receive antenna 4 and a transmit antenna 11 (*See, e.g.,* Urbas, Figure 2). The Office Action concedes that Urbas fails to disclose a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal as in claim 1. However, the Office Action asserts that Schuermann discloses these features. The Office Action asserts that a resonant circuit 34 as disclosed in Schuermann is equivalent to a single antenna adapted to simultaneously receive a first signal and transmit a second signal as in claim 1. The Office Action points to col. 4, lns. 55-58 and col. 6, lns. 38-48 of Schuermann as teaching these features. Applicant respectfully disagrees.

Applicant respectfully submits that Schuermann's resonant circuit 34 is a feature present on a transponder side of Schuermann's Radio Frequency Identification (RFID) system. Furthermore, Applicant respectfully submits that the feature of transmitting a second signal by the single antenna, which the Office Action asserts is disclosed in Schuermann at col. 6, lns. 38-48, is a feature present on an interrogator side of Schuermann's RFID system. In contrast, in claim 1, the single antenna adapted for simultaneously receiving a first signal and transmitting a second signal is present within the transponder.

In addition, the Office Action concedes that Urbas fails to disclose a modulator disposed between the antenna and the signal processor for providing a fourth signal to the antenna for forming the second signal, the modulator varying the impedance between the antenna and the signal processor for providing the antenna with a dual Q-factor, the Q-factor being high for the first signal and low for the second signal. However, the Office Action asserts that Schuermann discloses these features on col. 2, lns. 61- col. 3, ln. 8. Applicant respectfully disagrees.

Applicant respectfully submits that Schuermann discloses an interrogator adapted to send a powering burst to a transponder. During the powering burst, the interrogator and transponder are tuned with high Q-factor resonant circuits. The interrogator then begins to transmit WRITE data to the transponder using FSK modulation. Schuermann further discloses a modulator 48 present on an interrogator side of the RFID system.

Schuermann appears to disclose transmitting WRITE data to the transponder using FSK modulation and that the modulator 48 is present on an interrogator side of the RFID system, but fails to disclose a modulator disposed between the antenna and the signal processor within the transponder as claimed in claim 1. In claim 1, the first signal referred to is a received signal and the second signal referred to is a transmitted signal. Claim 1 recites, *inter alia*, a high Q-factor for the received first signal and a low Q-factor for the transmitted second signal.

Schuermann teaches a transponder tuned with high Q-factor resonant circuits that adapts itself to receive a larger bandwidth FSK signal by lowering the Q-factor of the tuned circuit. Schuermann fails to disclose using the lowered Q-factor to transmit. Applicant respectfully submits that Schuermann lowers the Q-factor of the tuned circuit for receiving a signal rather than transmitting the signal as in claim 1.

On pp. 12-13, the Office Action recites that

> [t]he claims col. 8, lines 29-65 clearly teach a dual Q-factor, but do not specifically state that the Q-factor is high for the second signal. Therefore, it can be assumed that the Q-factor can be indeed low for the second signal in order to increase data transfer rate.

The Office Action asserts that it can be assumed that the Q-factor can be low for the second signal in order to increase data transfer rate; however, no evidence in support of this

assumption is provided by the Office Action. Applicant respectfully requests that the Examiner provide evidence supporting this assertion or withdraw the rejection. *See, e.g., In re Zurko*, 258 F.3d 1379 (Fed. Cir. 2001).

For at least the reasons set forth above, Applicant respectfully submits that claim 1 distinguishes over the cited references. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 1 be withdrawn.

Independent claims 37, 49-50, 57, and 60 each recite, among other things, using a single antenna adapted for simultaneously receiving a first RF electromagnetic signal and transmitting a second RF electromagnetic signal. For similar reasons to those stated above with respect to independent claim 1, Applicant respectfully submits that each of independent claims 37, 49-50, 57, and 60 also distinguishes over the combination of Urbas and Schuermann. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 37, 49, 50, 57, and 60 be withdrawn.

Independent claim 54 is directed to an antenna adapted for simultaneously receiving and transmitting a first radio frequency (RF) electromagnetic signal and a second RF electromagnetic signal, respectively. Applicant respectfully submits that the cited references fail to teach or suggest at least one of the distinguishing features of independent claim 54, namely, a modulator disposed in series with a coil, first and second currents flowing through the modulator for providing the coil with a simultaneous dual Q factor, the Q factor being high for the first current and low for the second current.

The Office Action concedes that Urbas fails to disclose the feature of an antenna adapted for simultaneously receiving and transmitting a first radio frequency (RF) electromagnetic signal and a second RF electromagnetic signal. In addition, the Office Action concedes that Urbas fails to disclose first and second currents flowing through the modulator for providing the coil with a simultaneous dual Q factor, the Q factor being high for the first current and low for the second current. However, the Office Action asserts that Schuermann discloses these features. Applicant respectfully submits that Schuermann fails to cure the deficiencies of Urbas noted above. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claim 54 be withdrawn.

Independent claim 57 is directed to a transceiver. Applicant respectfully submits that the cited references fail to teach or suggest at least one of the distinguishing features of independent claim 57, namely, a single antenna adapted for simultaneously receiving a first radio frequency (RF) electromagnetic signal and transmitting a second RF electromagnetic signal. In addition, the cited references fail to teach or suggest a modulator disposed in series between the antenna and a signal processor for providing a fourth electrical signal to the antenna in a substantially stepwise manner to effect a variation in the current flowing through the antenna between a low and high value for allowing transmission of the second signal without substantially affecting the receiving efficiency of the antenna. Applicant respectfully submits that independent claim 57 also distinguishes over the cited combination of Urbas and Schuermann.

In similar fashion to independent claim 57, independent claim 59 is directed to a method for operating a transceiver. For similar reasons to those stated above with respect to independent claim 57, Applicant respectfully submits that independent claim 59 distinguishes over the cited combination of Urbas and Schuermann. Applicant respectfully requests that the 35 U.S.C. § 103(a) rejection of claims 57 and 59 be withdrawn.

Dependent claims 38-48, 51-53, 55-56, 58, and 61-69 depend from and further restrict independent claims 37, 50, 54, 57, and 60 in a patentable sense. Applicant respectfully submits that, for at least the reasons set forth above with respect to the rejection of independent claims 37, 50, 54, 57, and 60, respectively, dependent claims 38-48, 51-53, 55-56, 58, and 61-69 distinguish the cited combination of Urbas and Schuermann and are in condition for allowance. Withdrawal of the rejection of dependent claims 38-48, 51-53, 55-56, 58, and 61-69 is respectfully requested.

Independent claim 70 is directed to a tuned antenna. The Office Action concedes that Urbas fails to disclose the feature of a capacitor connected in parallel with a coil for providing a resonant frequency at or about a first predetermined frequency. The Office Action asserts that Schuermann teaches this feature. Applicant respectfully disagrees. Applicant respectfully submits that Schuermann also fails to teach or suggest this feature. The Office Action asserts that Urbas teaches the first and second signals referred to in claim 70 and that Schuermann teaches the third and fourth signals referred to in claim 70. Assuming, for the sake of argument, that the signals are in fact taught by Urbas and

Schuermann, Applicant respectfully submits that having the capacitor in Schuermann provide a resonant frequency of the first predetermined frequency cannot be taught by Schuermann when Schuermann does not disclose the signal having the first predetermined frequency in the first place. Applicant respectfully submits that independent claim 70 distinguishes over the cited combination of Urbas and Schuermann and requests that the 35 U.S.C. § 103 rejection of claim 70 be withdrawn.

Independent claim 71 is directed to a method for receiving and transmitting a first radio frequency (RF) electromagnetic signal and a fourth RF electromagnetic signal respectively to and from a transceiver. Applicant respectfully submits that neither Urbas nor Schuermann, singularly or in combination, teaches the feature of tuning an antenna with tuning circuitry to have a resonant frequency at or about a first predetermined frequency. Applicant respectfully requests that the 35 U.S.C. § 103 rejection of independent claim 71 be withdrawn.

Independent claim 72 is directed to a method for receiving and transmitting a first radio frequency (RF) electromagnetic signal and a fourth RF electromagnetic signal respectively. Applicant respectfully submits that neither Urbas nor Schuermann, singularly or in combination, teaches or suggests the feature of connecting a capacitor in parallel with a coil for providing an antenna with a resonant frequency at or about the first predetermined frequency. Applicant respectfully requests that the 35 U.S.C. § 103 rejection of independent claim 72 be withdrawn.

New claim 73 is directed to transceiver including a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal, the antenna being a tuned coil in which the first signal generates a first current and which supports a second current for generating the second signal. For similar reasons to those stated above with respect to independent claim 1, Applicant respectfully submits that claim 73 is in condition for allowance.

New claim 74 is directed to a transponder including a single antenna adapted for simultaneously receiving a first signal and transmitting a second signal, the first and second signals are modulated at a first frequency and a second frequency, respectively, the first and second frequencies being different to each other. For similar reasons to those stated above

with respect to independent claim 1, Applicant respectfully submits that claim 74 is in condition for allowance.

In view of the above amendment, Applicant respectfully submits that the present application is in condition for allowance. A Notice to that effect is respectfully requested.

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Respectfully submitted,

By /Ross T. Robinson/___
Ross T. Robinson
Registration No.: 47,031
WINSTEAD PC
P.O. Box 50784
Dallas, Texas 75201
(214) 745-5400
Attorneys For Applicant